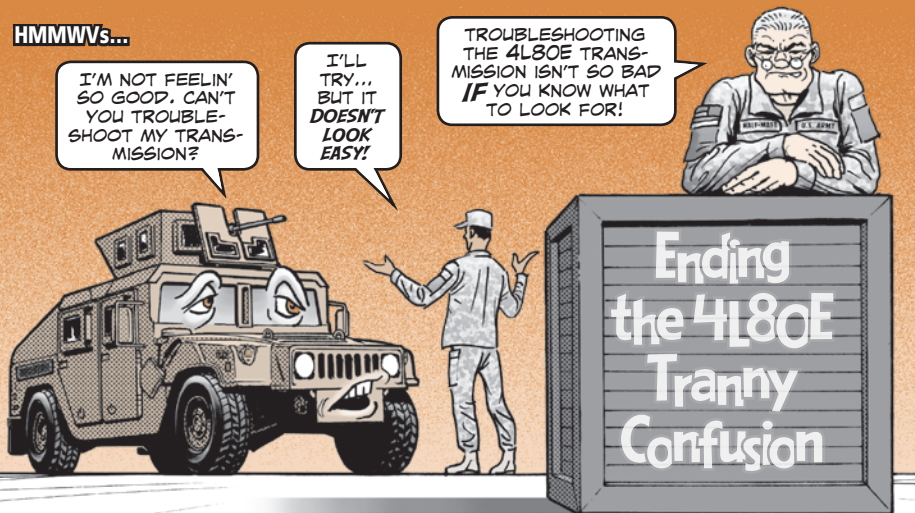


## HMMWVs...

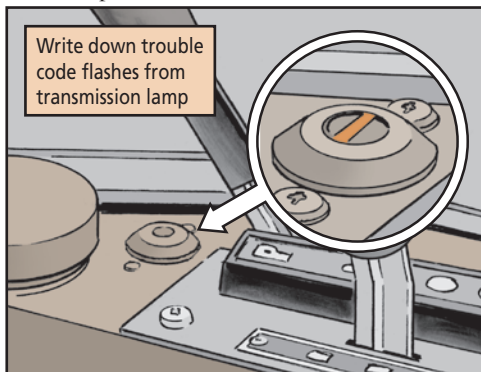


Mechanics, if you're confused by all those codes when it's time to troubleshoot the 4L80E electronic transmission in a HMMWV, read on. We've got a few tips that'll cut through the confusion and save you a lot of troubleshooting time.

### Before You Start

Before you get started, remember these tips:

- Write down the trouble codes from the vehicle's transmission control module (TCM) as they flash over the transmission lamp located next to the shift lever. Remember, codes 12 and 63 will always appear and should be disregarded. Next, clear the codes and road test the vehicle. Then check to see which trouble codes still show up. That eliminates false codes and saves troubleshooting time.
- Check all transmission sensor connections. Most problems are caused by loose or corroded wiring connections. After checking the connections, clear the trouble codes and road test the vehicle to see if that clears up the trouble.
- When multiple codes are reported by the computer, always troubleshoot the lowest code first and then work your way up. The higher-numbered codes are sometimes the result of the lower-numbered codes. So if you fix the lower codes first, you'll often find some of the higher codes will disappear.



### Before Changing the Transmission



- Make sure you have all of the proper diagnostic test equipment needed. That includes a multimeter, the throttle positioning sensor (TPS) block gauge, NSN 4820-01-179-4869, and the special purpose tool kit, NSN 5180-01-410-8467. This kit includes the following:

Item	NSN
Diagnostic switch cable	6150-01-410-8215
TPS cable	6150-01-412-7774
Seal installer*	5120-01-414-1849
Seal installer*	5120-01-437-0480
Drive handle*	5120-01-026-1666

\*These items are not required for diagnostic testing.

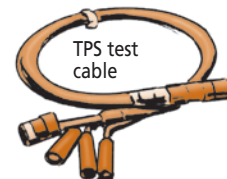
Get special tools for testing

Diagnostic switch cable



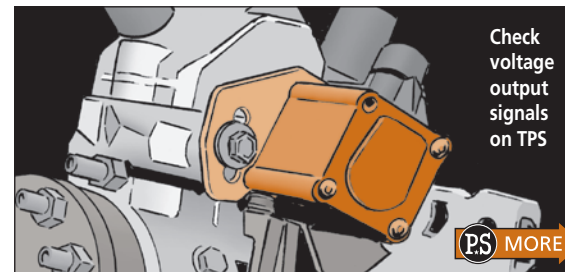
Multimeter

TPS block gauge



TPS test cable

- If you've never worked with this type of transmission, consult with your maintenance supervisor or TACOM LAR to get the help you need.
- If the truck's batteries have been serviced or replaced, it's important to properly reconnect the two power wires for the transmission control module (TCM). Do it wrong and the TCM gets 24 volts instead of the required 12. That burns up the TCM.
- Eyeball the transmission relay harness, which is located next to the batteries. If this harness ends up on top of the panel that separates the batteries and the relays, it may get cut when the passenger's seat is taken out and put back in. This will result in a no-shift mode and the transmission will be unable to change gears.
- Check the TPS voltage output signals. The TPS is used to send a signal to the TCM letting it know when to shift. The TPS may need to be adjusted or replaced.



A training video, *HMMWV A2 Electronic 4-speed Transmission*, is also available. The video focuses on the transmission's electronic component locations, functions and interactions and includes a section on common problems for diagnostic test codes.

You can order the video from the Defense Imagery website at:

<http://www.defenseimagery.mil/index.jsp>

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**HMMWV A2 ELECTRONIC 4-SPEED TRANSMISSION**  
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**HMMWV A2 ELECTRONIC 4-SPEED TRANSMISSION**  
PIN: 711363  
Description: PROGRAM FOCUSES ON THE ELECTRONIC ASPECT OF THE TRANSMISSION. IT REVIEWS ALL OF THE ELECTRONIC COMPONENTS LOCATION, FUNCTION, AND INTERACTION. THEN IT TESTS THE TRANSMISSION FOR COMMON PROBLEMS AND TEST CODES.  
Date of Completion: 07-APR-00  
Primary Audience: UNCLASSIFIED  
Public Clearance: NOT RELEASABLE FOR PUBLIC EXHIBITION/SALE  
Length: 027 MIN 09 SEC  
Delivery Mediums: DVD VIDEO  
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